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Diphtheria Toxin Fragment-Interleukin-2 Fusion Protein E7777

National Cancer Institute

Source

National Cancer Institute. *Diphtheria Toxin Fragment-Interleukin-2 Fusion Protein E7777*.
NCI Thesaurus. Code C126273.

A cytotoxic recombinant fusion protein consisting of the human cytokine interleukin-2 (IL-2) fused to diphtheria toxin fragments A and B, containing both the catalytic and translocation domains, with potential antineoplastic activity. Upon administration, the IL-2 moiety of diphtheria toxin fragment-IL-2 fusion protein E7777 binds to IL-2 receptors. After internalization by IL-2 receptor-expressing cells via endocytosis, the agent is proteolytically cleaved. This releases the catalytic domain of the toxin moiety, which catalyzes the transfer of the ADP-ribose moiety of NAD to a diphthamide residue of elongation factor 2 (EF-2). This covalent modification inactivates EF-2 and disrupts polypeptide chain elongation, resulting in an inhibition of translation and cell death. E7777 has the same amino acid sequence as denileukin diftotox (DD), but has an increased purity profile and an increased percentage of monomeric, active protein, which improves its efficacy.